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Trade credit in the rice market of the Mekong Delta in Vietnam

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Chapter 3

A Survey in the Rice Market of the Mekong Delta

3.1 Introduction

As mentioned in chapter 1, this thesis aims to investigate the role of trade credit provision in the rice market of the Mekong Delta. The literature on trade credit shows that data sets at firm-level and transaction-level are needed to study this issue. In order to collect data, we conducted a survey in 2007: 626 rice firms operating at the six main market segments of the rice market in the Mekong Delta were interviewed. The survey was conducted in the six provinces of An Giang, Tien Giang, Vinh Long, Can Tho, Hau Giang, and Soc Trang. This survey helped us to construct a data set that includes several variables that are relevant to our research.

This chapter describes the procedures of the survey, providing an overview of the rice market in the Mekong Delta and some statistics on the sample. Section 3.2 will provide an overview of the rice market in the Mekong Delta; it will describe the process of rice production and characteristics of the traders. Section 3.3 describes the data collection procedures. Next, section 3.4 presents some descriptive statistics of the data collected, and finally section 3.5 provides a summary of the main findings.

3.2 A Brief Description of the Rice Market of the Mekong Delta

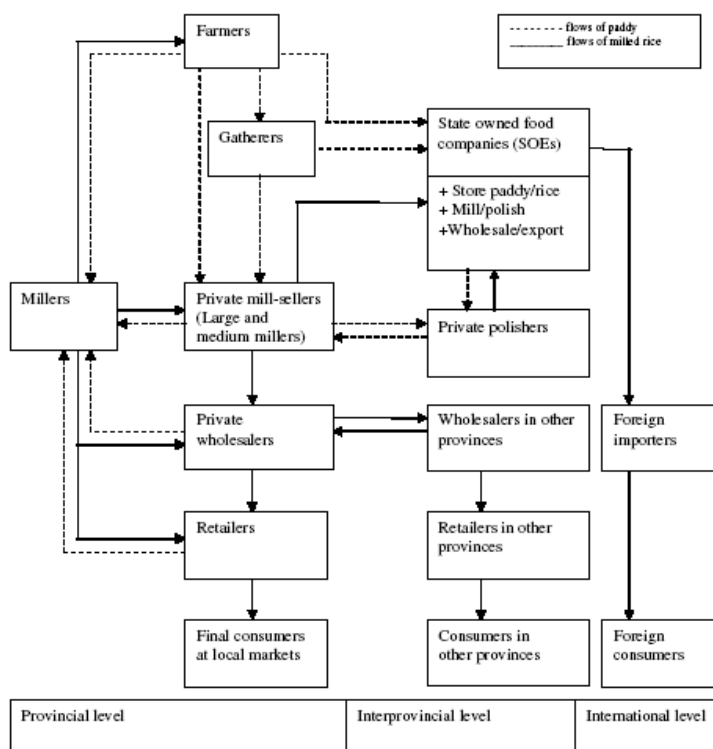
3.2.1 Overview of the Paddy/Rice Production

The Mekong Delta is the largest delta in the south of Vietnam. With an area of 39,554 km² (12 per cent of the entire country), the Mekong Delta has produced about 20 million tons of paddies or over 5 million ton of rice in 2008. This region has been considered as the rice bowl of Vietnam, as it accounts for 50 per cent of the total of rice produced in the country and provides about 90 per cent of the rice for export from Vietnam.

Details in the process of producing paddy/rice are described in figure 3.1. In general, there are several phases in producing paddy/rice in the Mekong Delta. First, farmers produce and dry the paddy immediately after harvesting. Next, farmers sell the paddy to assemblers/gatherers or they sell directly to processing firms; gatherers/assemblers are intermediaries who only purchase paddy from farmers and transport to sell to processing firms without processing the paddy. In the next phase the paddy is processed into rice. Processing firms check the standard requirements on moisture. After checking, the dried paddy is stored in warehouses while the paddy that is too moist is dried by dryers and/or by the sun. After this, the paddy will be processed further: it will be milled into brown or white rice. In the case of export rice, the brown rice is polished before packaging. The finished product will be stored in the warehouse until it is sold on the market.

The flows of paddy/rice in the Mekong Delta are presented in the figure 3.1. Paddy/rice is transported to several marketing agents in the same province and in other provinces in the Mekong Delta. Figure 3.1 shows that the key marketing agents in the regional rice market are gatherers, w-millers, millers, wholesalers, retailers, and SOEs.

Figure 3.1: Marketing channel of the rice market in The Mekong Delta



Source: Luu (2003)

3.2.2 Characteristics of Rice Traders in the Mekong Delta

Farmers

Farmers in the Mekong Delta generally cultivate relatively small irrigated farms with three main cropping seasons: winter-spring (October-February), spring-summer (February-May), and summer-autumn (June-September). Rice farmers in the Mekong Delta have relatively small farms that are 1 to 3 hectares on average. Farmers produce paddy and dry it immediately after harvesting. After storing some paddy for home consumption and keeping seeds for the next production cycle, most farmers sell the surplus to gatherers or processing firms i.e. SOEs and w-millers. In the Mekong Delta, about 75 per cent of the total paddy production is sold after harvesting. The proportion of marketable surplus is highest for farmers in this region (Minot and Goletti, 1995).

Gatherers/Assemblers

Gatherers usually buy paddy from farmers and transport it to processing firms such as w-millers and/or SOEs for immediate sale. They are not involved in any processing activity. Gatherers often operate in a relatively small area of about 10 kilometers. Since they work in one area for a long time, they have a good knowledge of the quality of the paddy from the farmers in the surrounding villages. According to the 1995 IFPRI survey of rice farmers, gatherers account for more than 95 per cent of the paddy purchased from farmers and transported and sold to processing firms.

Processing Firms

Processing firms in the Mekong Delta include private millers and the milling factories of state-owned enterprises. The difference in processing capacity among

traders at the milling sector is big. In Vietnam, there are about 620 large millers with a capacity of 15 to 200 tons per day and 30,000 small and medium millers (Huynh et al, 2009). Small millers have a producing capacity of 0.2 to 1 ton per day, while the capacity of medium-scaled millers is 1 to 15 tons per day shift.

In this study, we refer to millers as processing firms that provide milling services and charge a certain price per kg output. They are usually small millers that own a small factory with a small processing capacity (less than 1 ton of rice per day). They mainly provide milling services to farmers nearby for home consumption. These small millers exist in almost every village in the Mekong Delta. There are also a few large-scale millers/polishers in the Mekong Delta that provide milling and polishing services to other rice exporters and/or w-millers.

W-millers (medium and large-scale private millers) have a capacity of at least are larger than 1 ton of rice per day. They usually purchase paddy from farmers/gatherers and process this paddy into rice. They also store and sell milled rice as a final product to wholesalers and/or other w-millers. At the same time, w-millers also sell a large amount of milled rice to SOEs and private rice exporters. Millers/w-millers account for the milling and polishing of about 80 per cent of the total rice in the region (www.stp.vn).

There are 11 SOEs (state-owned enterprises) in the Mekong Delta of Vietnam. These are provincial food companies in each province. Each state-owned enterprise usually has a few modern factories with modern and high capacity machines to process high quality rice for exports. For example, the state-owned food company in the province of Tien Giang has four factories with an average production capacity of about 100 ton per day. Since SOEs have high capacity equipment to process and store rice, they are the main rice exporters of the region. They usually purchase milled rice from w-millers and polish rice to meet the requirements of foreign traders. Rice exporters also purchase paddy from farmers to produce rice; however, this accounts for a relatively small part of their exporting

volumes. They mill and polish about 20 per cent of the total of rice produced in the region.

Although the government tries to remove external and internal restrictions so that all rice firms are equal in exporting activities, the number of private firms that export their products is still very small. Moreover, the total number of rice exporters in the Mekong Delta remains small.

Wholesalers

Wholesalers play an important role in distributing rice for consumption in the region. In fact, wholesalers act as intermediaries who distribute rice from w-millers to final consumers in the Mekong Delta, by using rice retailers/small wholesalers in the region. According to Minot and Goletti (1995), rice wholesalers trade about 2 million tons of rice to be consumed in the region.

Retailers

Retailers usually have shops at marketplaces. Retailers mainly purchase rice from wholesalers located nearby, they store the rice and sell it to final consumers at local markets.

Gatherers and exporters (SOEs) are excluded from the empirical analyses in chapters 4, 5 and 6.³ We focus on the four market segments – w-millers, millers, wholesalers, and retailers – since these traders only produce and trade rice at the regional market. In these four segments, traders play a role that is different from that of the processing firms, service firms, and wholesale and retail firms. Due to

³ Gatherers mainly transport and trade paddy, which is different from rice, the main product of other market segments. Besides, SOEs concentrate on processing rice for exporting purposes and are mainly involved in exporting activities. SOEs play a dominant role in long distance trading, e.g. on the interregional and international market. The market of SOEs is very large since rice exporters may not only compete with rice exporters inside the country but also with rice exporters from other countries such as Thailand and India. As a consequence, it can be difficult to measure the market structure in this market segment.

the differences in the main business activities, we notice that the degree of market competition varies across these market segments (Luu, 2003).⁴ At the same time, trade credit is popular in this particular market. Therefore, we find that the rice market is an interesting case to investigate the impact of firm competitiveness on trade credit supply.

3.3 Description of Data Collection

Our data collection procedures consist of two stages: a pilot survey was conducted in 2006, and the survey was finalized in 2007.

3.3.1 The Pilot Survey

A pilot survey was carried out in June and July 2006 with the aim of field-testing the questionnaires and survey procedures. The pilot survey took place in the four provinces: Tien Giang, Vinh Long, Can Tho and Soc Trang in the Mekong Delta. Participants of the pilot included a small group of agents involved in the rice market of the Mekong Delta. They are two SOEs in Tien Giang and Vinh Long, five millers, five wholesales, and five retailers and five gatherers in Can Tho and Soc Trang. At this stage of the research, the quality of information and a good insight into different businesses as well as business relationships in marketing was the main issue.

The participants were selected through the network that had previously been established. The interviewees were former students of the School of Economics and Business Administration of Can Tho University and were at that time working at the interviewed rice firms. The discussions with these interviewees were open and helpful. The interviewees provided useful feedback on our measures about firm competitiveness and trade credit use, and they allowed us to test the

⁴ See section 3.4.3.

validity of our questionnaires. After completing the pilot, much was revised on the basis of the feedback we got from the interviewees, e.g. we rephrased several questions to make them more accessible to rice traders. The interviewees also suggested that we use some measures of competition that would be easier to apply for the rice traders.

3.3.2 The Official Survey

The final survey was conducted in the summer of 2007. The key criterion to select the provinces for our survey was that the provinces had to be the main rice producers in the Mekong Delta: the number of rice traders in these provinces is high, just like the volume of trade between rice traders.

The six selected provinces are: An Giang, Tien Giang, Vinh Long, Can Tho, Hau Giang, and Soc Trang. An Giang was selected because recently this province has been the largest rice producer in the Mekong Delta; for example, in 2006, when the Mekong Delta produced 18,229,200 tons paddy, An Giang was the largest producer with a total amount of 2,923,200 tons.

The other five provinces in the survey are all large rice producers. One of the advantages that these provinces have over others, is that they are located close to one another and along national highway 1A; transport between these provinces is convenient and can be via roads and waterways. Inter-province trade transactions are large, and market integration between these provinces is expected to be high. Traders in these provinces can easily exchange information on the rice market such as prices, policy and other rice firms.

The Enterprise Survey

In Vietnam, nationwide enterprise surveys are conducted every five years to collect information on every corporation. This enterprise survey collects data for the government to evaluate the performance of current economic policies and to make

plans for the future economic development of the country. The latest enterprise survey, which was announced by a Prime Minister's Decision on August 15, 2006, took place in July 2007.

Early July we learned about the enterprise survey. We found that it thought it would be a great advantage if the staff of statistic bureaus in each province were to conduct our survey together with the enterprise survey. Firstly, the interview team appeared to be highly qualified; the staff of statistics bureaus has a lot of experience with enterprise interviews. Secondly, the government had authorized the statistic bureaus to do the interviews. That means that firms will be more cooperative and will sooner make an appointment; this is important since it can be very difficult to make appointments to interview a large number of firms. Thirdly, the staff of the statistics bureaus has been working with these firms for quite some time. Every year, firms in each province have to provide all kinds of reports such as balance sheets, cash flow statements and profitability statements, since the statistics bureau in each province has to prepare data for the province yearbook. As a result, firms will provide relatively consistent answers since big differences in the figures/numbers when compared to the previous year will lead to many questions. In addition, firms also try to provide useful answers to other questions. Fourthly, the two questionnaires of our survey and the enterprises survey contained several similar questions. For example, both questionnaires include questions on background information: main business activities, and accounting figures as total sales, assets, resources of capital, bank loans, employees etc., and business results for the previous year (2006). Therefore, it is convenient for staff of the statistics bureaus in each province to conduct the two surveys in parallel: the enterprise survey and our survey.

Survey Procedures

In June 2007, with the introduction from Can Tho University, we contacted statistics bureaus in each of the six selected provinces. We proposed a cooperation by conducting our survey together with the enterprises survey. Soon after reaching an agreement with the statistics bureaus in 2007, a short training was organized to explain our questionnaire to the staff of the bureaus. Our survey was conducted in the period July to September 2007 and led to 626 interviews with rice firms in the Mekong Delta.

Sample Selection

As mentioned, our sample mainly includes rice firms at the four main market segments of the rice industry in the Mekong Delta. They are millers, w-millers, wholesalers and retailers. In addition, we interviewed some rice exporters and gatherers to enable us to better describe the rice market.

In each province, the statistics bureau prepared a list of rice firms from different districts. The lists included registered rice firms that are millers, w-millers, wholesalers and SOEs. Each list included all firms located in a particular district, and the firms were listed in alphabetical order. We decided to select the first firm of every five firms in the list (numbers 1, 5, 10 etc. of the lists) to take part in the interview.

Rice retailers are not registered firms. They usually have shops at marketplaces. These shops are often located in the main street of a local (district) market. We picked the first shop out of every 10 shops for our interview.

In total, 626 rice firms in the Mekong Delta were interviewed within three months. As the focus of the study is trade credit use among rice firms in the rice market of the Mekong Delta, in our interviews we focused on important traders in domestic markets as processing firms (w-millers/millers) and trading firms (wholesalers and retailers).

The interviewers made an appointment and sent the questionnaires to the interviewees one week prior to the interview. Next, the interviewers did interview firm owners (managers) face to face. In each province, we attended the interviews for two days to observe and/or check whether the interviewees had any questions regarding the questionnaire and whether the interviewers could explain things properly. At the same time, we also checked whether the finished questionnaires were filled in properly. Early October 2007, we again visited each province for two days, we worked together with the interviewers to check all the information of the completed questionnaires and collected them.

3.4 Descriptive Statistics of the Sample

The core target of this project is to investigate the relevance of trade credit supply as a marketing instrument. Existing studies on this topic mainly focus on the impact of market characteristics on trade credit supply such as market competition, bargaining power. We therefore concentrate on gathering information on market context, i.e. firm competitiveness as a measure of market competition at the firm level, a firm's bargaining power. This section presents descriptive statistics of the measures of trade credit supply: firm competitiveness. We also show statistic figures of other control variables that may influence trade credit supply, such as firm size, firm age, firm profitability, and the firm's financial constraints.

3.4.1 Overview of the Sample

Size and Age of Firms In the Sample

The sample includes 158 w-millers, 183 millers, 101 wholesalers, and 145 retailers. It includes six local state-owned enterprises (exporters); the rest of the sample is private firms. Categories of the survey firms are presented in table (3.1).

In our survey, the size of firms is measured by its total assets. On average, the value of total assets of the firms in our sample is about 2.5 billion VND

(155,097 USD); the firm age is about eight years. Regarding the distribution of the surveyed firms of the sample, table 3.1 reveals that firms with capital of less than 1 billion VND (62,039 USD) account for 70 per cent of the sample, while firms with capital more than 1 billion VND make up 30 per cent of the sample.

Table 3.1: Distribution of rice firms according to main business activities and firm size (measured by total assets)

| Categories of the surveyed firms | Number of firms | Percentages |
|-----------------------------------|-----------------|-------------|
| State-owned enterprises | 6 | 1 |
| Private firms | 620 | 99 |
| Types of firms | | |
| Retailers | 145 | 23.3 |
| Wholesalers | 101 | 16.3 |
| Millers | 184 | 29.23 |
| W-millers | 158 | 25.08 |
| Gatherers | 17 | 2.88 |
| Exporters | 21 | 3.35 |
| Size of firms | | |
| Less than 100 million VND | 204 | 32.59 |
| From 100 million to 1 billion VND | 232 | 37.06 |
| From 1 to 5 billion VND | 131 | 20.93 |
| More than 5 billion VND | 59 | 9.42 |

Source: survey in 2007

Table 3.2: Size and age of the surveyed rice firms

| | Obs | Max | Mean | Min | St.dev |
|------------------------------------|-----|---------|--------|-------|--------|
| FAGE (years) | 625 | 29 | 8.37 | 1 | 5.20 |
| FSIZE(millions VND) | 626 | 269,000 | 2,520 | 1 | 12,300 |
| FSIZE at different market segments | | | | | |
| SOEs/private exporters | 21 | 269,000 | 31,900 | 6,560 | 55,600 |
| W-millers | 158 | 73,300 | 4,220 | 18 | 8,580 |
| Millers | 184 | 6,110 | 669 | 15 | 807 |
| Wholesalers | 101 | 15,000 | 1,010 | 11 | 2,550 |
| Retailers | 145 | 410 | 35.3 | 1 | 55.5 |
| Gatherers | 17 | 2,500 | 615 | 170 | 605 |

Source: survey in 2007

Profitability

Table 3.3: Descriptive statistics of profitable variables

| MARGIN | Obs. | Max | Mean | Min | St.dev |
|------------------|------|------|------|-------|--------|
| The whole sample | 626 | 0.61 | 0.13 | 0 | 0.1183 |
| W-millers | 158 | 0.50 | 0.13 | 0 | 0.1289 |
| Millers | 184 | 0.61 | 0.23 | 0 | 0.1106 |
| Wholesalers | 101 | 0.55 | 0.06 | 0.003 | 0.0776 |
| Retailers | 145 | 0.28 | 0.07 | 0.003 | 0.0397 |

Source: own survey, conducted in 2007

We measure the firms' profitability by using the price-cost margin.⁵ On average, the price-cost margin of firms in our sample is 0.13. The price-cost margin also varies much across different market segments: it is higher for processing firms (average of *MARGIN* is 0.23 for millers and 0.13 for w-millers) than it is for trading firms (average of *MARGIN* is 0.06 for wholesalers and 0.07 for retailers) (table 3.3).

3.4.2 Trade Credit Provision

Trade credit appears to be used extensively in this particular market. Overall, the figures in table 3.4 show that 65 per cent of the firms in the sample (i.e. 410 of our 626 rice firms) grants trade credit to their clients. The average amount of trade credit granted is about 25 per cent of total sales.

⁵ The price-cost margin is calculated by $\frac{\text{average price} - \text{average variable costs}}{\text{average price}}$. Details are

explained in chapter 4, pages 81

Table 3.4: Distribution of the surveyed rice firms providing credit

| | Total firms | Credit supplying firms | Amount of trade credit supply (proportion of credit sales (%)) |
|--------------|--------------------|-------------------------------|---|
| Total sample | 626 | 410 | 0.25 |
| (%) | | 65.49 | |
| W-millers | 158 | 145 | 0.40 |
| (%) | | 91.77 | |
| Millers | 184 | 55 | 0.13 |
| (%) | | 28.98 | |
| Wholesalers | 101 | 74 | 0.30 |
| (%) | | 73.27 | |
| Retailers | 145 | 101 | 0.19 |
| (%) | | 69.65 | |

Source: own survey, conducted in 2007

Rice firms at different market segments appear to behave differently with respect to trade credit provision. The differences in trade credit provision are large and statistically significant across the four market segments. Trade credit occurs more frequently in the segments of w-millers, wholesalers and retailers than with millers. In fact, 92 per cent of w-millers in the sample provide trade credit to customers, and about 40 per cent of revenues were made on delayed payments in 2006. The percentage of traders at the wholesale segment granting credit decreases to 73 per cent, while the proportion of credit sales is 30 per cent of the total revenues. Traders at the retail and miller segments seem to provide less credit to their clients; on average, 70 per cent at the retail segment offer credit to trading partners, and the percentage of sales made on credit is about 19 per cent. At the same time, only 29 per cent of the millers grant credit to their customers, and about 13 per cent of their sales were made on delayed payments in 2006.

Experience with defaulting by clients

On average, 26 per cent of the traders in our sample confirm that they were not been paid at least once in the last three year by their clients, who have receive credit. Retailers are most likely to not being paid, since 41 per cent of retailers in

our sample mention that they have not been able to get their money back at least once. This figure is 24 per cent for w-millers and wholesalers, while it is 19 per cent in the case of millers. The maximum of times that firms in our sample have not been paid in the last three year is six.

Table 3.5: Experience with defaulting by clients

| Number of firms that were not paid | Total firms | Number of firms that were not paid | Number of times firms were not paid |
|---|--------------------|---|--|
| Total sample | 626 | 165 | 0.79 |
| (%) | | 26.36 | |
| W-millers | 158 | 38 | 0.59 |
| (%) | | 24.05 | |
| Millers | 184 | 35 | 0.63 |
| (%) | | 19.02 | |
| Wholesalers | 101 | 25 | 0.44 |
| (%) | | 24.75 | |
| Retailers | 145 | 60 | 1.57 |
| (%) | | 41.37 | |

Source: own survey, conducted in 2007

Trade Credit Received

Table 3.6 Trade credit received

| Trade credit obtained (BUYDP) | Obs | Max | Mean | Min | St.dev |
|--------------------------------------|------------|------------|-------------|------------|---------------|
| Total sample | 626 | 1 | 0.13 | 0 | 0.2275 |
| At market segment level | | | | | |
| W-millers | 132 | 0.80 | 0.14 | 0 | 0.2253 |
| Wholesalers | 99 | 1 | 0.10 | 0 | 0.1882 |
| Retailers | 145 | 1 | 0.13 | 0 | 0.3011 |

Source: own survey, conducted in 2007

The firms in our sample also receive credit from their suppliers. On average, w-millers purchase about 14 per cent of their total input on delayed payments. In the case of retailers, 13 per cent of total inputs is purchased on credit, and at the

wholesale market this is 10 per cent. Millers are mainly involved in providing milling services, they seldom purchase paddy/rice and therefore do not receive credit from suppliers.

3.4.3 Firm Competitiveness

The data in this section reflect firm competitiveness in the rice market. According to Porter's five forces, firm competitiveness in an industry is driven by the following factors: competition with existing rivals, bargaining power vis-à-vis customers, bargaining power vis-à-vis suppliers, threats of nearby substitutes, and barriers to new entrants.

In our survey, we use several indicators to measure firm competitiveness. In this section, we show five indicators that measure the three following factors that drive firm competitiveness: competition from existing rivals (*PERCOMP*, *NORIVALS*), bargaining power vis-à-vis customer (*BPWCUS*, *SALDEC*), and bargaining power vis-à-vis suppliers (*BPWSUP*). These factors are very likely to affect trade credit supply.

Existing competition occurs between businesses in the rice market that supply products to the same type of clients. We try to measure existing competition by using two variables: *PERCOMP* and *NORIVALS*. *PERCOMP* is a scale variable indicating the important role of market competition and its effects on the results of their rice business, according to the interviewees: (0=no pressure through competition at all; 1=little competition but not important; 2=competition is relatively important; 3=competition is important; 4=competition is extremely important). *NORIVALS* is estimated by the number of competitors a rice firm uses as a reference to determine its prices. Although the variation of *PERCOMP* across the four segments is relatively low, it is statistically significant. Table 3.7 shows that on average w-millers consider competition to be more important to their business activities than other rice traders do. (*PERCOMP* mean: w-millers 3.32;

wholesalers 2.9; millers 2.86; and retailers 2.83.) In general, w-millers check their selling prices with more competitors to determine their own selling prices (five competitors) than other rice traders do (three competitors).

Regarding a firm's bargaining power vis-à-vis customers, the firm can be more competitive if it has a high bargaining power over its customers with respect to determining selling prices and contract terms. We use the two important indicators: *BPWCUS* and *SALDEC* to estimate a firm's bargaining power vis-à-vis its customers. *BPWCUS* is estimated by the percentage of sales for which a firm can set the selling prices without any negotiations with customers. *SALDEC* is measured by the percentage sales would decrease if a firm sets its selling price at 1 per cent higher than the other suppliers. Our rice firms state that they can set selling prices without negotiating with customers for about 44 per cent of total sales. In addition, using a selling price that is 1 per cent higher than the prices of other supplies leads to a decrease in sales of about 62 per cent. This shows that competition in this particular market is fierce. Note that the Mekong Delta yields about 4 million tons of exporting rice each year, which is about 90 per cent of the exported rice of the entire country. Consequently, the number of traders is very high in this region and they process and trade large volumes. To illustrate, the average size of an order in the w-miller segment is about 94 tons.

Table 3.7: Firm competitiveness measures

| | Obs. | Max | Mean | Min | Median | St.dev |
|----------|-------------|------------|-------------|------------|---------------|---------------|
| PERCOMP | 626 | 4 | 3.04 | 0 | 3 | 0.9773 |
| NORIVALS | 599 | 20 | 3.99 | 0 | 3 | 3.4874 |
| SALDEC | 609 | 1 | 0.62 | 0 | 0.75 | 0.3720 |
| BPWCUS | 593 | 1 | 0.44 | 0 | 0.4 | 0.3728 |
| BPWSUP | 583 | 100 | 26 | 0 | 20 | 27 |

Source: own survey, conducted in 2007

Moreover, there are large differences in a firm's bargaining power vis-à-vis its customers across different market segments. Retailers appear to have more bargaining power vis-à-vis their clients than traders in other market segments. For example, retailers can decide on the selling price of 65 per cent of their total sales (table 3.8) while wholesalers can determine the selling price of 40 per cent of their total sales. This figure is 43 per cent for millers and 40 per cent for the w-millers.

Regarding a firm's bargaining power vis-à-vis its suppliers, theoretically it is less attractive for a firm if its suppliers have strong bargaining power. We use the variable *BPWSUP*, measured by the differences in selling prices that induce a customer to move away from their regular supplier. This indicator aims to capture the strength of a firm's bargaining power compared to its suppliers in negotiating contract terms and prices. Table 3.8 shows that w-millers are very careful with input prices since a difference of 14 VND in purchasing price per kg paddy may lead to w-millers switching to another supplier. This indicates that w-millers have a stronger bargaining power vis-à-vis their suppliers (gatherers). In addition, bargaining power vis-à-vis the supplier is better for wholesalers than it is for retailers. A difference of 25 VND per kg rice will cause wholesalers to move to another supplier, while a difference of 50 VND per kg rice would stimulate rice retailers to behave similarly.

In short, competition appears to be important to rice traders in the Mekong Delta. At the same time, the data shows significant differences in the characteristics of market structure across the four main market segments. W-millers face the strongest pressure from competition and have the least bargaining power with customers; as processing firms, w-millers usually buy and sell very large amounts and therefore their clients may have strong bargaining power. At the same time, w-millers have strong bargaining power vis-à-vis their suppliers at their input market. Wholesalers also experience a lot of competition and have a relatively low bargaining power with their customers. Retailers have the strongest

bargaining power vis-à-vis customers; however, they have very little bargaining power with their suppliers.

Table 3.8: Mean and median of competitive measures across different market segments

| | W-millers | Millers | Wholesalers | Retailers | Sig. |
|----------|-----------|---------|-------------|-----------|------|
| PERCOMP | | | | | *** |
| Mean | 3.32 | 2.86 | 2.90 | 2.83 | |
| Median | 4 | 3 | 3 | 3 | |
| NORIVALS | | | | | *** |
| Mean | 5.2 | 3.44 | 3.72 | 3.81 | |
| Median | 4 | 3 | 3 | 3 | |
| BPWCUS | | | | | *** |
| Mean | 0.30 | 0.72 | 0.70 | 0.65 | |
| Median | 0.15 | 0.80 | 0.85 | 0.75 | |
| SALDEC | | | | | *** |
| Mean | 0.72 | 0.43 | 0.40 | 0.34 | |
| Median | 0.90 | 0.4 | 0.30 | 0.1 | |
| BPWSUP | | | | | *** |
| Mean | 14 | 18 | 25 | 50 | |
| Median | 10 | 10 | 10 | 50 | |

Source: own survey, conducted in 2007

The one-way ANOVA test for the mean difference of firms' competitiveness measures across the four different markets segments: w-millers, millers, wholesalers and retailers.

*** indicate significance at the 1 per cent level.

3.4.4 Financial Constraints

A lack of capital can negatively influence a firm's incentives to provide trade credit. With the aim of controlling for the impact of the lack of capital on trade credit provision, we gather information on firms' financial constraints and their access to bank loans. First, we asked rice traders to evaluate the importance of their shortage of capital on the results of their businesses (*LACKCAP*: 0=no lack of capital at all; 1=lack of capital is not important; 2=lack of capital is relatively important; 3=lack of capital is important; 4=lack of capital is extremely important). According to Luu (2003), financial constraints can make life very difficult for rice

traders in the Mekong Delta; the figures in table 3.9 confirm this as the mean of *LACKCAP* is 3.

Table 3.9: The importance of financial constraints

| LACKCAP | Obs | Max | Mean | Min | St.dev. |
|----------------|------------|------------|-------------|------------|----------------|
| Sample | 626 | 4 | 3.04 | 0 | 0.9904 |
| W-millers | 158 | 4 | 3.2 | 0 | 1.021 |
| Millers | 184 | 4 | 2.79 | 0 | 0.9246 |
| Wholesalers | 101 | 4 | 3.09 | 0 | 1.02 |
| Retailers | 145 | 4 | 3.15 | 0 | 0.9904 |

Source: own survey, conducted in 2007

We also asked whether rice firms had any difficulty raising bank loans, and if they had a loan in 2006. 21 per cent of our sample confirmed that they find it difficult to apply for a bank loan, and 41 per cent of the rice traders in our sample had a bank loan in 2006. W-millers used bank loans more frequently than traders in other market segments; for example, 66 per cent of w-millers had a bank loan in 2006. 43.56 per cent of the traders in the wholesaler segment had a bank loan, while 37.5 per cent of the millers used bank loans in 2006. Rice retailers seldom use bank credit, since only 9 per cent of them had a bank loan. A possible explanation for this may be that w-millers and millers have factories that they can use as collateral in applying for a bank loan. Wholesalers may obtain a bank loan by using their large shops as collateral. Retailers do not have such means, and that explains why they have fewer bank loans: retailers complained that financial constraints were making business more difficult.

Table 3.10: Firms using bank loans in 2006

| | Number of firms | Percentages |
|------------------|------------------------|--------------------|
| Sample | 256 (626) | 40.90 |
| At segment level | | |
| W-millers | 105(158) | 66.46 |
| Millers | 68 (184) | 37.50 |
| Wholesalers | 44(101) | 43.56 |
| Retailers | 13(145) | 8.97 |

Source: own survey, conducted in 2007

3.5 Summary

This chapter describes the statistical data of our sample of respondents: rice firms operating in the four main market segments of the rice industry. It sheds some light on the way rice traders in the Mekong Delta work.

Our sample contains 626 rice firms, including four important types of traders on the domestic rice market: w-millers, millers, wholesalers and retailers. It shows that market competition is very fierce in this particular industry. It also indicates that financial constraints are important obstacles to the rice traders of the Mekong Delta. In addition, it shows that the use of trade credit, market structures and several firm characteristics vary significantly across the four main segments of the rice market. For example, we observe that there is a statistically significant difference in firm size, firm profitability, competitiveness, and trade credit behavior across these market segments.

